

## ABSTRACT

Creating a dental model from a series of images of an intra-oral object includes the steps of (a) capturing a series of images of an intra-oral object from a plurality of capture positions, where the object includes common surface features and a control target arranged with respect to the object to provide control features; (b) measuring the common features from the series of images of the object and the control features from the control target imaged with the images of the object; (c) analytically generating a 3-dimensional model of the object by photogrammetrically aligning the measurements of the control features, thereby reducing image errors due to the variability of the capture positions; and (d) adjusting the photogrammetrically aligned 3-dimensional model of the object by aligning the common features of the model to like features on the image of the object, thereby producing an aligned dental model from the series of images.

15